

REMARKS

This Amendment is responsive to the Office Action of May 27, 2005. Claims 1-30 have been cancelled without prejudice to pursuing these claims in one or more divisional applications. Claims 31, 33 and 34 have been amended. Claims 31 - 34 remain pending in this application. Reexamination and reconsideration are respectfully requested.

Preliminarily, Applicants would like to acknowledge with appreciation the indicated allowability of Claim 32 and to stress that the following arguments in no way are intended to limit the full scope of that claim.

The Examiner rejected Claim 34 under 35 USC 112, second paragraph, as being indefinite. This rejection is respectfully traversed.

This rejection has been overcome by a minor amendment to Claim 34 deleting "second" in front of "control loop".

The Examiner rejected Claims 33 - 34 under 35 USC 102(e) as being anticipated by Ly (6,608,523). This rejection is respectfully traversed.

With respect to Claim 33, the examiner stated that Ly's figure 3 may be read as "the claimed control loop including first and second signal paths with a delay mismatch". Yet Ly states (at column 2, line 64) that a "delay circuit 40 on the main signal path 16 delays the signals from the output of the amplifier 12 on the main signal path 16 to experience substantially the same delay as the corresponding signals from the output of the amplifier 12 which pass over the coupling path 30 through the coupler 28 to the coupler 46". That is, the first and second signal paths are substantially matched in delay in Ly's patent. (This discussion of Figure 2 of Ly is incorporated by reference into Figure

3-Col. 5, lines 42-46). To further clarify this distinguishing feature the preamble has been rewritten to recite that the signal paths have a “substantial delay mismatch” and this has also been referenced in the body of the claim to clearly distinguish the Ly reference.

Furthermore, Ly differs from the present invention in that Ly does not control the second loop to a stable steady state pilot level offset from a minimum value using a single pilot frequency (as set out in Claim 33 as amended). Ly's specification states (column 6, line 65-column 7, line 8) “In response to the amplitude of the pilot signal at the at least one pilot frequency, the processing circuitry 82 provides gain and/or phase control signal(s) 101 and/or 102 to gain and/or phase circuit 42. The control signals are provided to adjust the relative gain and/or phase between the pilot signals and distortions being combined at the coupler 46 to reduce the pilot signal and thereby the distortion on the main signal path 16. When the amplitude of the pilot signal is minimized, the distortion on the feed forward path 18 and the main signal path 16 substantially cancel each other at the output of the coupler 46.” That is, the stable, steady-state offset from the minimum pilot level is zero.

Ly repeats the above-mentioned minimization on the average pilot level when two pilot frequencies are used but averages the two pilot signal turning points (TP1 and TP2). The examiner's interpretation of the Ly reference is that at least one of the pilot frequencies will inherently be offset from the minimum pilot level due to the average of the two pilot signal turning points (TP1 and TP2). Assuming *arguendo* this inherency argument is correct, the way the offset of the pilot level is achieved by Ly clearly

requires a second pilot frequency. The approach of the present invention is completely different and uses a single pilot frequency, as clarified in amended Claim 33.

Accordingly, it is respectfully submitted the rejection of claim 33 is fully traversed.

With respect to Claim 34, the claim has been amended similarly to Claim 33 to recite a "single pilot frequency" to distinguish the Ly reference as discussed above. Furthermore, Claim 34 recites that the single pilot frequency is offset from the center frequency of the RF signal bandwidth and that the distortion cancellation is "generally symmetrical about the center of the RF signal bandwidth". The Examiner's rejection, however, refers to Ly's disclosure of "pilot frequencies being symmetrical about the center of the RF signal bandwidth". This clearly cannot be read on the single pilot frequency of Claim 34 as amended. Accordingly, it is respectfully submitted the rejection of Claim 34 is fully traversed.

The Examiner rejected Claim 31 under 35 USC 103(a) as being unpatentable over Ly in view of Lieu. This rejection is respectfully traversed.

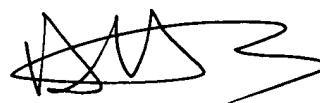
The Ly reference has been discussed above. As acknowledged by the Examiner Ly fails to disclose "a cost function having a floor value and a penalty..." as claimed. The Lieu reference in turn also has no teachings directed to the use of floors and penalties as set out in Claim 31. The Examiner interpreted a "floor" as simply a minimum and a "penalty" as a variable step size. However, the "minimum" of a measured cost function cannot be interpreted as the same as or equivalent to a floor. As is clear from the specification, the claimed "floor" is a limit, imposed on the measured cost function that, if active, increases the cost. The penalty is a directional bias that favors the loop phase setting with the highest or lowest control setting amongst the

phase control settings whose measured cost is equal or below the specified floor. The penalty is in no way related to the step size of the search trajectory. Within Lieu, the "increase" and "decrease" directions are correlated to changes in the measured cost ("better" or "worse"), with preference given to the direction that reduces the measured cost. There is no directional bias to favor either higher or lower phase settings when the measured costs of two or more phase settings are equal. Claim 31 has been amended to further clarify this distinction. Accordingly, it is respectfully submitted the rejection of Claim 31 is fully traversed.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and a Notice of Allowance is respectfully requested. It is requested that the Examiner telephone the undersigned attorney if it appears that any impediment remains to allowance of the application.

Respectfully submitted,

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David L. Henty
Registration No. 31,323
Myers Dawes Andras & Sherman LLP
19900 MacArthur Boulevard, Suite 1150
Irvine, CA 92612
(949) 223-9600